APPENDIX C:

ALTERNATIVE COST ANALYSIS

Table C-1
Capital Cost Estimate for Alternative 1
(Surface Capping, Vapor Barriers, Natural Attenuation of Soil and Groundwater

Cost Item	Quantity	Unit	Unit Cost	Total Direct Cost (rounded)
Surface Covering				
Asphalting	8190	SF	2.5	$ 20,475
Landscaping				
-- Rock	75	CY	21.5	$ 1,613
-- Plantings	75	CY	7	$ 525
Subtotal				*$ 22,700*
TOTAL DIRECT CAPITAL COSTS (TDCC)				**$ 22,700**
INDIRECT CAPITAL COSTS				
Engineering, legal, administration (20% of TDCC)				**$ 4,500**
Contractor overhead and profit (25% of TDCC)				**$ 5,700**
TOTAL INDIRECT CAPITAL COST				**$ 10,200**
TOTAL CAPITAL COST REQUIREMENT				
Total direct and indirect capital costs				**$ 32,900**
Contingency (30%)				**$ 9,900**
TOTAL PROJECT CAPITAL COST				**$ 42,800**

* Note: Due to rounding, numbers may not appear to add exactly.

Table C-2
O&M Cost Estimate for Alternative 1
(Surface Capping, Vapor Barriers, Natural Attenuation of Soil and Groundwater)

Cost Component	Quantity	Unit	Unit Cost $		Annualized Cost $/Year
Groundwater Monitored Natural Attenuation					
Laboratory Analysis	1	event	2592	$	2,600
Labor	1	event	1980	$	2,000
Report Preparation	1	event	2400	$	2,400
subtotal				*$*	*7,000*
Maintenance (3% Capital Cost)				$	700
Environmental Monitoring					
Soil Cleanup Level Compliance Monitoring (anticipated year 30)				$	10,000
Total Annual Cost (Year 1-29)				**$**	**7,700**
Total Annual Cost (Year 30)				**$**	**17,700**

* Note: Due to rounding, numbers may not appear to add exactly.

Table C-3
Capital Cost Estimate for Alternative 2
(Limited Soil Excavation, Oxidation, Natural Attenuation of Soil and Groundwater)

Cost Item	Quantity	Unit	Unit Cost		Total Direct Cost (rounded)
Excavation					
Labor	1200	TON	25.8	$	31,000
Waste Disposal	1200	TON	21.4	$	25,700
Trucking	1200	TON	18	$	21,600
Backfill	1200	TON	1.29	$	1,600
Oversight	10	DAY	660	$	6,600
Onsite Analytical Laboratory	5	DAY	2000	$	10,000
Subtotal				***$***	***96,500***
Surface Covering					
Asphalting	6141	SF	2.5	$	15,353
Landscaping					
-- Rock	75	CY	21.5	$	1,613
-- Plantings	75	CY	7	$	525
Subtotal				***$***	***17,500***
Oxidation					
ORC (NaOH flakes)	1000	LBS	0.57	$	600
Feed Pump	1000	LBS	0.02	$	100
Labor	8	HOUR	55	$	500
Subtotal				***$***	***1,200***
TOTAL DIRECT CAPITAL COSTS (TDCC)				**$**	**115,200**
INDIRECT CAPITAL COSTS					
Engineering, legal, administration (20% of TDCC)				**$**	**23,000**
Contractor overhead and profit (25% of TDCC)				**$**	**28,800**
TOTAL INDIRECT CAPITAL COST				**$**	**51,800**
TOTAL CAPITAL COST REQUIREMENT					
Total direct and indirect capital costs				**$**	**167,000**
Contingency (30%)				**$**	**50,100**
TOTAL PROJECT CAPITAL COST				**$**	**217,100**

* Note: Due to rounding, numbers may not appear to add exactly.

Table C-4
O&M Cost Estimate for Alternative 2
(Limited Soil Excavation, Oxidation, Natural Attenuation of Soil and Groundwater)

Cost Component	Quantity	Unit	Unit Cost $		Annualized Cost $/Year
Monitored Natural Attenuation (Years 1-2, 19-20)					
Laboratory Analysis	4	event	2592	$	10,400
Labor	4	event	1980	$	7,900
Report Preparation	4	event	2400	$	9,600
Monitored Natural Attenuation (Years 3-18)					
Laboratory Analysis	1	event	2592	$	2,600
Labor	1	event	1980	$	2,000
Report Preparation	1	event	2400	$	2,400
Maintenance (3% Capital Cost)				$	3,500
Environmental Monitoring					
Soil Cleanup Level Compliance Monitoring (anticipated year 20)				$	10,000
Total Annual Cost (Years 1-2, 19)				**$**	**31,400**
Total Annual Cost (Years 3-18)				**$**	**10,500**
Total Annual Cost (Year 20)				**$**	**37,900**

* Note: Due to rounding, numbers may not appear to add exactly.

Table C-5
Capital Cost Estimate for Alternative 3
(Soil Excavation, Oxidation, Natural Attenuation of Soil and Groundwater)

Cost Item	Quantity	Unit	Unit Cost	Total Direct Cost (rounded)
Excavation				
Labor	6000	TON	25.8	$ 154,800
Building Removal	1	Each	5000	$ 5,000
Waste Disposal	6000	TON	21.4	$ 128,400
Trucking	6000	TON	18	$ 108,000
Backfill	6000	TON	1.29	$ 7,800
Oversight	38	DAY	660	$ 25,100
Onsite Analytical Laboratory	20	DAY	2000	$ 40,000
Subtotal				***$ 469,100***
Oxidation				
ORC (NaOH flakes)	5000	LBS	0.57	$ 2,900
Feed Pump	5000	LBS	0.02	$ 100
Labor	8	HOUR	55	$ 500
Subtotal				***$ 3,500***
TOTAL DIRECT CAPITAL COSTS (TDCC)				**$ 472,600**
INDIRECT CAPITAL COSTS				
Engineering, legal, administration (20% of TDCC)				**$ 94,500**
Contractor overhead and profit (25% of TDCC)				**$ 118,200**
TOTAL INDIRECT CAPITAL COST				**$ 212,700**
TOTAL CAPITAL COST REQUIREMENT				
Total direct and indirect capital costs				**$ 685,300**
Contingency (30%)				**$ 205,600**
TOTAL PROJECT CAPITAL COST				**$ 890,900**

* Note: Due to rounding, numbers may not appear to add exactly.

Table C-6
O&M Cost Estimate for Alternative 3
(Soil Excavation, Oxidation, Natural Attenuation of Groundwater)

Cost Component	Quantity	Unit	Unit Cost $	Annualized Cost $/Year	
Monitored Natural Attenuation (Years 1-3)					
Laboratory Analysis	4	event	2592	$	10,400
Labor	4	event	1980	$	7,900
Report Preparation	4	event	2400	$	9,600
Total Annual Cost (Years 1-3)				**$**	**27,900**

* Note: Due to rounding, numbers may not appear to add exactly.

Table C-7
Present Worth Cost

Alternative	Initial Capital Investment $	Present Value of O&M Costs $	Total Present Worth $
ALTERNATIVE 1			
For 3% net discount rate	42,800	155,000	197,800
For 5% net discount rate	42,800	121,000	163,800
For 10% net discount rate	42,800	73,000	115,800
ALTERNATIVE 2			
For 3% net discount rate	217,100	220,000	437,100
For 5% net discount rate	217,100	186,000	403,100
For 10% net discount rate	217,100	132,000	349,100
ALTERNATIVE 3			
For 3% net discount rate	890,900	79,000	969,900
For 5% net discount rate	890,900	76,000	966,900
For 10% net discount rate	890,900	69,000	959,900